

### Remarks

The Applicants have added new Claim 29 which recites "reducing the frictional coefficient between the yarn and the second heated roll to cause a desired amount of slip so that there is no winding of the yarn back on the second heated roll at a high relaxation factor by using the second heated roll of surface roughness 1.5S - 8S at 105 – 180°C." Entry into the official file is respectfully requested.

Claims 15 – 19, 21, 22 and 24 stand rejected under 35 U.S.C. §112, first paragraph. The Applicants note with appreciation the Examiner's helpful comments with respect to Claim 15 and the stress-strain curve. The Applicants have deleted "from a stress-strain curve" from line 2 of Claim 15. The Applicants respectfully submit that such deletion now places those claims into conformance with §112. Withdrawal of the rejection is respectfully requested.

Claims 15 – 19, 21, 22 and 24 stand rejected under 35 U.S.C. §103 over the combination of Toshio and Rowan with Fujimoto. The Applicants again note with appreciation the Examiner's detailed comments hypothetically applying the combination of publications against those claims. The Applicants nonetheless respectfully submit that such a combination would still not result in the subject matter recited in those rejected claims. Details are set forth below.

The Applicants have discovered that heat treatment at the second roll is particularly important. However, such a heat treatment at the second roll is not sufficient to achieve the appropriate high relaxation factor of 10 – 20% at a high spinning rate of at least 2,000 m/min. Thus, the Applicants have also discovered that achieving such high relaxation factors at the high spinning rates should be conducted with a particular surface roughness of that second heated roll. That surface roughness should be 1.5S - 8S.

The Applicants have further discovered that the combination of the heat treatment at the second roll and the second roll having a surface roughness of 1.5S - 8S has unforeseen benefits. In that regard, if the surface roughness is at least 1.5S, the frictional coefficient between the yarn and the second heated roll is reduced considerably. As a consequence, a certain amount of slip is introduced so that even at a high relaxation factor, there is no winding of the yarn back on the heating roll and stable yarn production is possible. This is set forth in the Applicants' specification, beginning on page 14, line 29 and extending through the top of page 15.

The Applicants respectfully submit that hypothetically combining Toshio and Rowan with Fujimoto would not produce such a claimed methodology. Fujimoto does not disclose the use of a heated roll with such a surface roughness and Fujimoto does not achieve a relaxation heat treatment at a high relaxation factor of 10 – 20% at a high spinning rate of at least 2,000 m/min. The taught relaxation factor of Fujimoto does not occur at the high spinning rate recited by the Applicants.


The Applicants respectfully submit that neither Rowan nor Toshio cure this deficiency inasmuch as neither they, nor Fujimoto, teach or disclose reducing the frictional coefficient between the yarn and the second heated roll to cause a desired amount of slip so that there is no winding of the yarn back on the second heated roll at a high relaxation factor. None of the three references appreciate this possibility, much less provide teachings as to how to achieve that goal.

In that regard, although Rowan refers to surface finish values, those surface finish values are directed toward relaxation alone. There is no mention of deliberately introducing an amount of slip so that there is no winding of the yarn back onto the particular roll, much less the second heated roll. This is particularly true when taken in conjunction with the temperature of the Rowan rolls which specifically states that if the temperature rises about 100°C, mechanical quality of the yarn, among other things, "is diminished." This is sharply contrasted to the Applicants which employ the second

heated roll at 105 – 180°C. This completely different temperature range which is taught to be problematic by Rowan, when taken in conjunction with the specified surface roughness, provides results that are completely unexpected by Rowan which has the closest disclosure with respect to this particular portion of the rejected claim. Thus, one skilled in the art would have no reasonable expectation of success when looking to Rowan in the context of a hypothetical combination with Toshio and Fujimoto. Therefore, the Applicants respectfully submit that the combination is inapplicable. Withdrawal of the rejection is respectfully requested.

In light of the foregoing, the Applicants respectfully submit that the entire application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,



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